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EXAMINER	
GORMAN, DARREN W	

ART UNIT	PAPER NUMBER
3752	

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06/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/658,151	WARD ET AL.	
	Examiner	Art Unit	
	Darren W. Gorman	3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7,10-19,21-32,38-47,49,51 and 56-66* is/are pending in the application.

4a) Of the above claim(s) *58-65* is/are withdrawn from consideration.

5)☒ Claim(s) *38-47,49,51 and 66* is/are allowed.

6)☒ Claim(s) *1-5,7,10-19 and 21-32* is/are rejected.

7)☒ Claim(s) *56 and 57* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 14, 2007 has been entered.

Election/Restrictions

2. As noted in paragraph 1 of the office action mailed November 13, 2006, claims 56 and 57 depended from canceled claim 55. As amended by applicant in the response filed May 14, 2007, claims 56 and 57 now depend from claim 38, which was indicated as allowable in the November 13, 2006 office action. Accordingly, claims 56 and 57 are no longer withdrawn from consideration because they require all the limitations of an allowable claim. Claims 56 and 57 are hereby rejoined and fully examined for patentability under 37 CFR 1.104. However, claims 58-65, directed to non-elected species remain withdrawn from consideration because they do not require all the limitations of an allowable claim.

Minor Claim Suggestions By Examiner

3. The following non-substantive changes are recommended to improve the clarity of the claims. Although the below suggestions would amend claim 38, which is already indicated as being allowed, the examiner feels that these non-substantive changes will result in a more

definite claim. These changes are recommended because the "anti-icing system" and "pre-wetting system" were already introduced into the claim on lines 11 and 12, thus adopting the below changes will avoid double inclusions in the claim.

- In claim 38, on line 15, "wherein the liquid dispensing system includes a pre-wetting system including" should be replaced with --wherein the pre-wetting system includes--
- In claim 38, on line 16, "an anti-icing system including" should be replaced with --the anti-icing system includes--

Claim Objections

4. Claims 29, 30, 56 and 57 are objected to because of the following informalities:

- Regarding claims 29 and 30, the recitations with respect to "a/the container" are unclear. As understood by the examiner, the "container" is the same element as the "hopper" recited in claim 1, from which claim 29 now indirectly depends. The claim language should be amended appropriately such that the terminology is consistent and double inclusions are eliminated.
- Further, regarding claim 29, the recitation, "a conveyor assembly" is a double inclusion in the claim, since the "conveyor assembly" was recited in claim 1.
- Regarding claims 56 and 57, on lines 2 and 7, respectively, the recitation "the nozzles" (i.e. plural nozzles) does not necessarily have clear antecedent basis back to claim 38, because claim 38 recites "at least one nozzle" (i.e. possibly singular).

Appropriate correction is required.

5. Claims 31 and 32 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claims, or amend the claims to place the claims in proper dependent form, or rewrite the claims in independent form.

Claims 31 and 32, recite that the liquid dispensing system includes a liquid dispensing element, the liquid dispensing element comprising a nozzle, whereas claim 28, from which they depend, recites "the liquid dispensing system includes a plurality of movable nozzles". Claims 31 and 32 fail to further limit what is recited in claim 28.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 2, 4, 5, 13-18, 21-24 and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doherty et al., USPN 6,173,904.

Doherty shows a vehicle (40) (see Figures 1 and 2) comprising: a chassis (no reference number); and a storage and dispensing apparatus (42) disposed upon the chassis, comprising: a hopper (48) for storing granular material (44); a conveyor assembly (50) for selectively transporting the material from the hopper, at least a portion of the conveyor assembly being

disposed within the hopper; a liquid storage system (54) for storing liquid; and a liquid dispensing system (56) for selectively dispensing the liquid from the liquid storage system.

Doherty further shows a body (no reference number) mounted to the chassis, the body having front and rear ends and first and second side walls, the body being disposed between the chassis and the storage and dispensing apparatus, the storage and dispensing apparatus being disposed within the first and second side walls of the body (see Figures 1 and 2).

Doherty also shows a portion of the rear end of the storage and dispensing apparatus extending beyond the rear end of the body (see Figure 1).

Further, Doherty shows the liquid dispensing system having a pre-wetting system (no reference number, second spray bar shown in Figure 2; see column 3, lines 5-8), and an anti-icing system (56), wherein each system includes a plurality of nozzles (see Figure 2). Doherty also shows the hopper including a discharge chute (52), wherein the pre-wetting system includes nozzles disposed in the discharge chute (see again Figure 2; and column 3, lines 5-8). It should be noted that, although Figure 2 of Doherty does not clearly show that the pre-wetting nozzles are in fact within the discharge chute, Doherty's disclosure that the granular material is pre-wetted "prior to the granular material being dispensed", in combination with what is shown in the view of Figure 2, inherently disposes the pre-wetting nozzles in the discharge chute.

Also, although Doherty does not expressly disclose a "plumbing cabinet" housing at least a portion of the liquid dispensing system, such is inherent within the vehicle of Doherty because the liquid dispensing system of Doherty inherently includes a piping system, valves, pumps, etc., and inherently at least one of these elements, if not all of these elements of the liquid dispensing system is housed within an enclosure of some sort, thereby anticipating the claim.

Doherty further discloses that the spray bar position/orientation may be controlled locally or remotely (see column 5, lines 6-8). Doherty also discloses that a series of valves such as solenoid valves may be remotely operated, and that the width of the spray from each nozzle can be controlled by either the operator or by automated control (see column 5, lines 33-38).

Doherty also discloses a control system (including on board computer 216), which monitors several parameters and controls the liquid dispensing system depending on the condition of the parameters (see column 16, lines 10-45). As to the limitation, "wherein the liquid dispensing system includes a plurality of movable nozzles", Doherty expressly discloses that the position of liquid spray bar (56), which includes a plurality of nozzles (64), may be "locally or remotely variable so that it may extend at any angle from the truck, to create any number of orientations" (see column 5, lines 6-8). As to the limitation, "the control system independently adjusting the nozzles in response to the condition of the at least one parameter", Doherty expressly discloses that the liquid flow rate and proportion to the nozzles is controlled and adjusted in response to at least one parameter (such as the spread pattern of granular material), and that the nozzles themselves may also be adjustable to provide even finer control of the liquid material spread width in response to sensed conditions of the at least one parameter (see column 12, line 52 through column 13, line 6). Again, the Examiner notes that Doherty discloses that the width of the spray from each nozzle can be controlled by either the operator or by automated control (see again, column 5, lines 33-38). It should also be noted that Doherty further expressly teaches placing a variety of sensors on the vehicle "in order to tailor application of materials more exactly to local conditions and requirements" (see column 16, lines 46-56). Further, Doherty discloses spray bar (56) as being an anti-icing system, which selectively

dispenses liquid from the vehicle, and Doherty also discloses another series of nozzles (no reference number) for pre-wetting the granular material prior to being dispensed from the container (see column 3, lines 5-8).

As to the storage and dispensing apparatus including the limitations recited on lines 9-18 of claim 1, Doherty shows and discloses the liquid storage system defining a liquid containment vessel (54), which "may essentially be bifurcated and positioned along the length of the vehicle on the outer sides of the granular hopper" (see column 4, lines 59-62). It should be noted, although Figure 2 of Doherty does not clearly show each of the structural limitations recited on lines 9-18 of claim 1, the arrangement of the liquid vessel as described in column 4, lines 59-62 of Doherty would necessarily meet all of these limitations, with the possible exception of a "connecting section disposed between the first and second side sections, the connecting section disposed between the bottom and the base". Although such a connecting section may actually exist in the vehicle shown by Doherty, such is not expressly disclosed or shown by Doherty.

One having ordinary skill in the art would readily recognize the advantages of providing fluid communication between the two halves of the bifurcated tank (54) shown by Doherty. For example, loading the tank with liquid would only have to be done on one tank side, since the fluid communication would permit filling of both tank sides at once, thereby eliminating a second filling step prior to use. Further, when in use, the liquid dispensing system need only be connected to one tank side for dispensing the liquid, as opposed to separate fluid connections and valving mechanisms for each side, which would be more expensive to install and more complicated to operate. Still further, one having ordinary skill in the art would readily recognize that providing a connecting section for fluid communication between the two tank sides would

permit the tank halves to remain at equalized levels in use, which would prevent the possibility of rendering the vehicle dangerously off-balance. In other words, since the liquid dispensing features of the device of Doherty are used while the vehicle is moving, one having ordinary skill would recognize that unloading one tank side while leaving the other tank side full, would present an undesired weight distribution. And since road de-icing vehicles, such as that shown by Doherty, are often used for spraying road surfaces on tight curves, such as those found on mountain roads and exit ramps, such an undesired weight distribution would present a potential rollover risk. Moreover, one having ordinary skill in the art would readily recognize that disposing the connecting section between the bottom and the base would provide the optimal fluid communication between the two tank sides, since such a location would eliminate the need for any sort of fluid transfer device(s), such as pumps, between the two tank sides. In other words, the liquid in the tank halves would self equalize since the ingress/egress points of each tank half would be located at the lowest point of the tanks.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a connecting section between the first and second side sections of the tank shown by Doherty, the connecting section being disposed between the bottom and base, such that the user would only have to fill one side in order to load the liquid into the vehicle, and such that the dispensing system would require a less complicated and less expensive configuration, and such that undesired weight distributions are eliminated, thereby preventing a potential rollover risk, and such that the tank halves can self-equalize without the use of any other fluid transfer devices.

As to claims 17 and 18, Doherty shows or renders obvious all of the recited elements of claim 16, however Doherty does not expressly disclose the anti-icing system including a pair of nozzle assemblies. Doherty does expressly disclose that spray bar (56) of the anti-icing system "may also be formed by a vertical stack of smaller spray bars and nozzles" (see column 5, lines 1-3). In such an arrangement as disclosed by Doherty, the "vertical stack of smaller spray bars" would reasonably read on a single nozzle assembly having at least an upper pair of nozzles, lower pair of nozzles, and intermediate pair of nozzles, the nozzle assembly depending from the storage and dispensing apparatus.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the nozzle assembly disclosed by Doherty, such that a pair of nozzle assemblies depend from the storage and dispensing apparatus of Doherty, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

8. Claims 3, 7 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doherty et al., USPN 6,173,904, in view of Kime, USPN 6,446,879.

Doherty shows or renders obvious all of the recited elements of claims 1 and 2, however, Doherty does not expressly teach the body being pivotally mounted to the chassis, nor does Doherty expressly teach the conveyor assembly comprising a pair of augers. Further, Doherty does not expressly teach the storage and dispensing apparatus including a clean-out passage connected to the liquid dispensing system.

Kime shows a road treatment vehicle (10) (see Figures 1-6), comprising a body pivotally mounted to the vehicle chassis (see Figure 2), the body including a hopper (270) for storing solid granular material and at least one liquid storage tank (308, 310), and a conveyor assembly disposed within the hopper comprising a pair of augers (76, 78) in substantially parallel, spaced relationship to each other (see Figure 5). Further, Kime shows a plurality of clean-out passages (322-328) connected to the at least one liquid storage tank (see Figure 6; and column 11, lines 24-26).

As to claim 3, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have pivotally mounted the body of Doherty, as taught by Kime, in order to further facilitate conveying of the granular material within the hopper body by using gravity.

As to claim 7, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the conveyor assembly of Doherty to include a pair of augers in parallel spaced arrangement, as taught by Kime, in order to provide a more reliable material conveying system that is capable of conveying a larger quantity of material.

As to claim 25, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include at least one clean-out passage, as taught by Kime, connected to the liquid storage tank of Doherty, in order to facilitate cleaning out and draining of the liquid storage tank.

9. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doherty et al., USPN 6,173,904, in view of Kime, USPN 6,068,200.

Doherty shows or renders obvious all of the recited elements of claim 1, however Doherty is silent as to including a plurality of "braces" having a plurality of holes disposed within the liquid containment vessel.

Kime shows a vehicle having a liquid storage tank (370) (see Figure 4) including a plurality of baffle-type braces (386-388, 390, 422-425), each brace having a plurality of holes (see Figure 5A; and column 12, lines 52-58), wherein the braces improve structural integrity for the tank, while preventing the "slosh phenomena", which may occur with sudden stops of the vehicle (see Figure 4; and column 14, lines 2-6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include perforated baffle-type braces, as taught by Kime, in the liquid storage tank of Doherty, such that the tank has improved structural integrity and such that the "slosh phenomena" is prevented during sudden stops of the vehicle.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doherty et al., USPN 6,173,904, in view of Wise et al., USPN 5,186,396.

Doherty shows or renders obvious all of the recited elements of claim 1, however Doherty is silent as to including a liquid agitation system.

Wise shows a road treatment vehicle (10) (see Figures 1 and 5), which dispenses granular and liquid material, including a liquid storage system having a flow control valve (42), which either permits liquid flow to a series of nozzles (21) or recirculates the liquid back to a liquid storage tank (16). It is well known in the art that recirculating liquids within a liquid storage and dispensing system inherently agitates and mixes liquid.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid storage and dispensing system of Doherty, to recirculate the stored liquid, as taught by Wise, in order to agitate the liquid such that suspended particles within the liquid are kept uniformly mixed within the solution.

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doherty et al., USPN 6,173,904, in view of Kubacak et al., USPN 4,315,602.

Regarding claim 19, Doherty shows or renders obvious all of the recited elements of claim 18, however, Doherty does not expressly teach each nozzle being rotatable.

Kubacak shows spray bar assembly for a vehicle including nozzle pairs, each nozzle (52) being mounted on a swivel (54) such that the nozzles may be adjusted depending on the desired spray pattern (see Figure 2; and column 4, lines 26-32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the nozzles of Doherty to be rotatable, as taught by Kubacak, such that the nozzles can be adjusted depending on the desired spray pattern.

12. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doherty et al., USPN 6,173,904, in view of Ungerer et al., USPN 6,123,276.

Doherty shows or renders obvious all of the recited elements of claim 1, however Doherty does not expressly teach the hopper including a plurality of grate screens covering the hopper opening, nor does Doherty teach an "interlock system" associated with the grate screens.

Ungerer shows a vehicle having a granular material hopper, wherein the hopper opening is covered by a plurality of grate screens which permit loading of granular material through the screens while preventing personnel from entering the hopper, the grate screens including an interlock system which selectively prevents the grate screens from being opened and reduces the possibility of inadvertent activation of an auger within the hopper while the grate screens are open (see Figures 1-6; and column 1, line 23 through column 2, line 44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include grate screens and an interlock system, as taught by Ungerer, with the vehicle shown by Doherty, in order to permit loading of granular material while preventing personnel from entering the hopper and to selectively prevent the grate screens from being opened in order to improve safety of personnel using the vehicle.

Allowable Subject Matter

13. Claims 38-47, 49, 51 and 66 allowed.

14. Claims 56 and 57 would be allowable if rewritten to overcome the objections as set forth under paragraph 4 of this office action, and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

15. Applicant's arguments, see pages 12-13, paragraphs 4 and 5, of the "Remarks" section of the response filed May 14, 2007, with respect to the rejection of claim 1 under 35 USC § 102(b),

have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection under 35 USC § 103(a) is made in view of Doherty, USPN 6,173,904.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darren W. Gorman whose telephone number is 571-272-4901. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on 571-272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Darren W Gorman
Examiner
Art Unit 3752

DWG 6/7/07
DWG
June 7, 2007